commodore
SOFTWARE

COMMODORE SOFTWARE DIVISION

FEBRUARY 9, 1984

I. OVERVIEW..Sig Hartmann

II. MARKET DEVELOPMENT................................Mike Tomczyk

III. PUBLICATIONS......................................Mike Tomczyk

IV. PRODUCTIVITY SOFTWARE.............................Paul Goheen

V. RECREATIONAL SOFTWARE.............................John Mathias

VI. EDUCATIONAL SOFTWARE..............................Dan Kunz

VII. "TED" FAMILY..Andy Finkel

VIII. OPERATING SYSTEMS.................................Bob Russell

IX. OPERATIONS..Larry Ercolino

BEGINNINGS

ADVERTISING

MARKETING

SALES

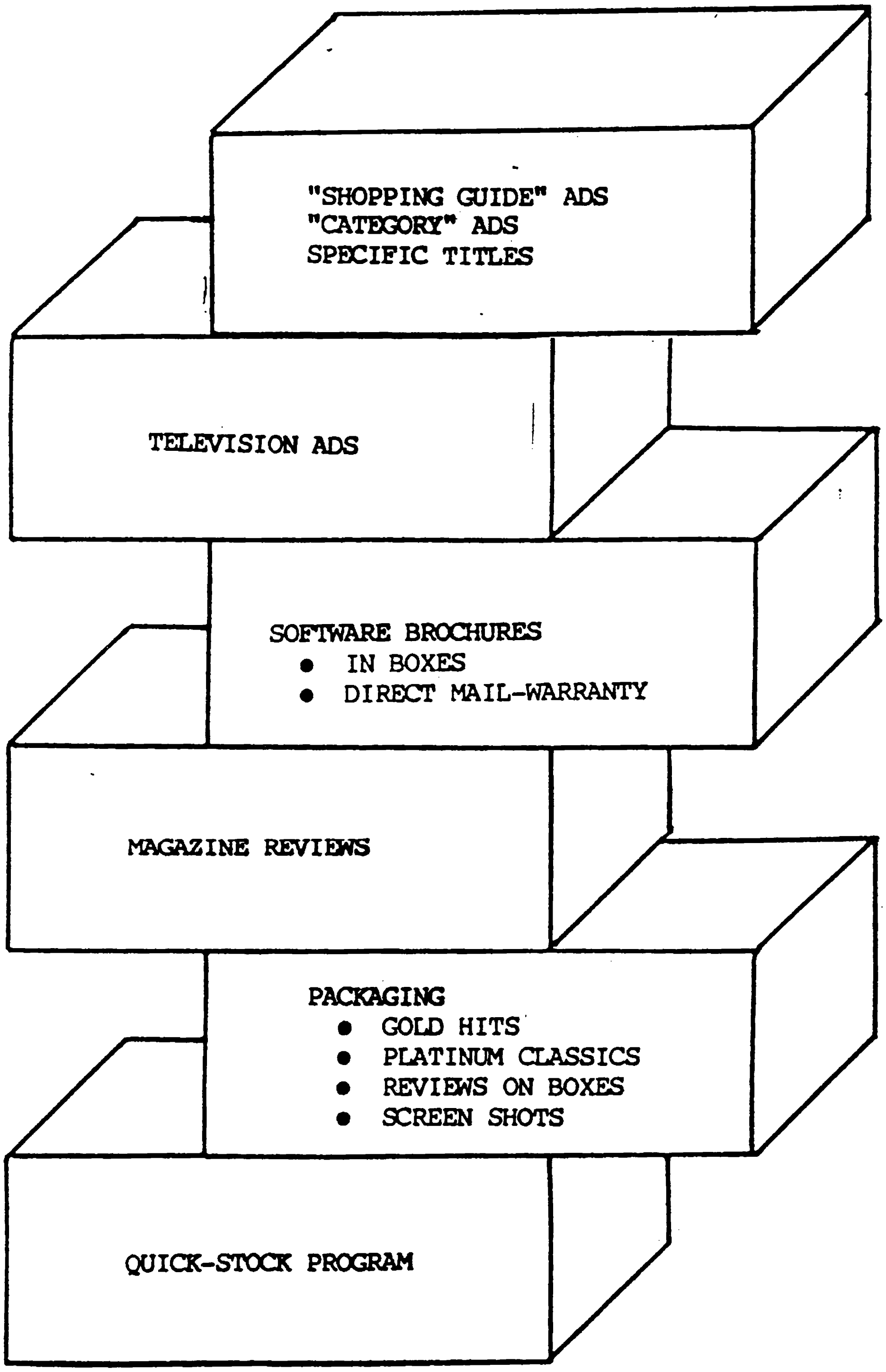
INTERNATIONAL
COORDINATION

STARTS. . .BUT

NEED

RESPONSIBILITY

SOFTWARE ADVERTISING



"SHOPPING GUIDE" ADS
"CATEGORY" ADS
SPECIFIC TITLES

TELEVISION ADS

SOFTWARE BROCHURES

- IN BOXES
- DIRECT MAIL-WARRANTY

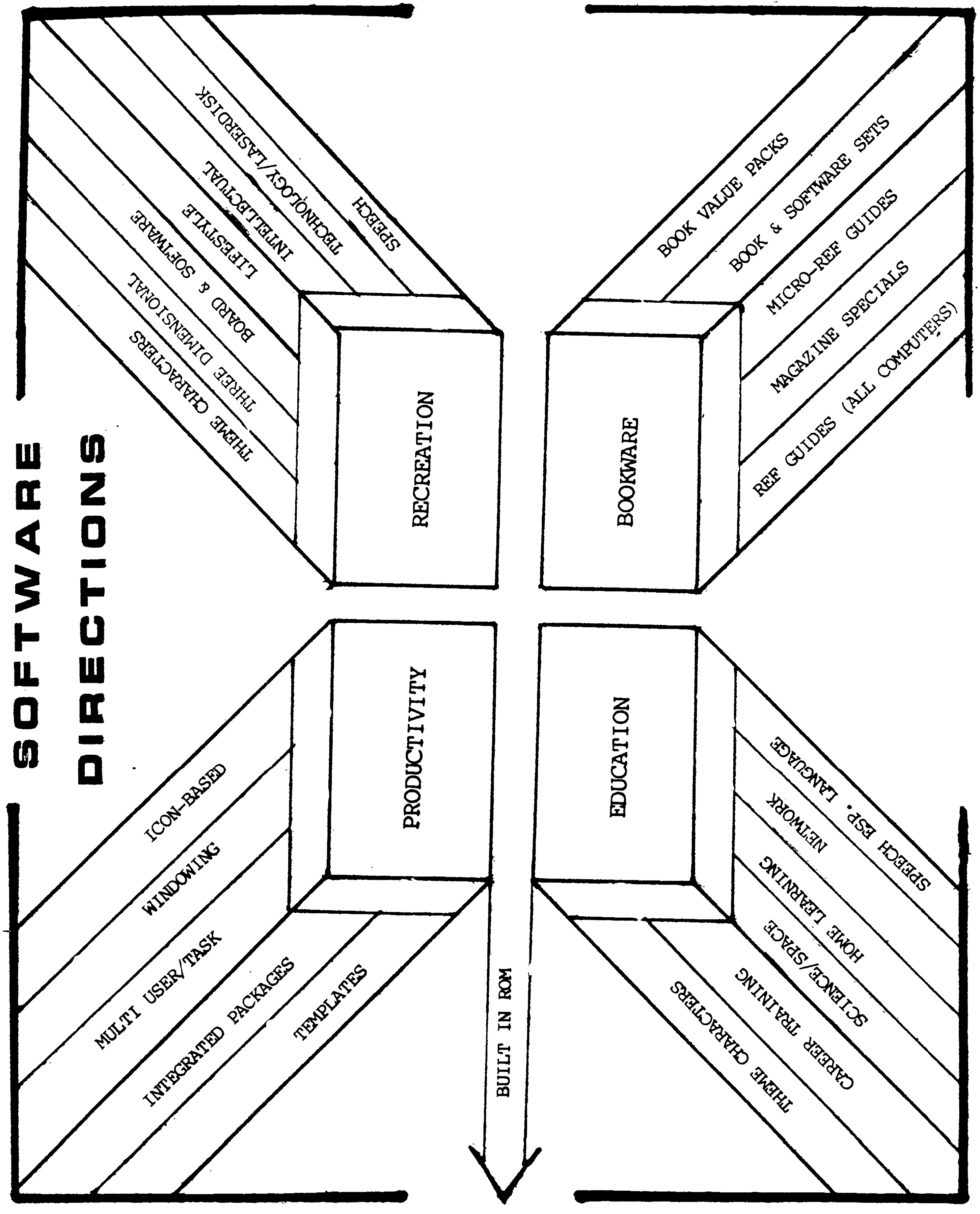
MAGAZINE REVIEWS

PACKAGING

- GOLD HITS
- PLATINUM CLASSICS
- REVIEWS ON BOXES
- SCREEN SHOTS

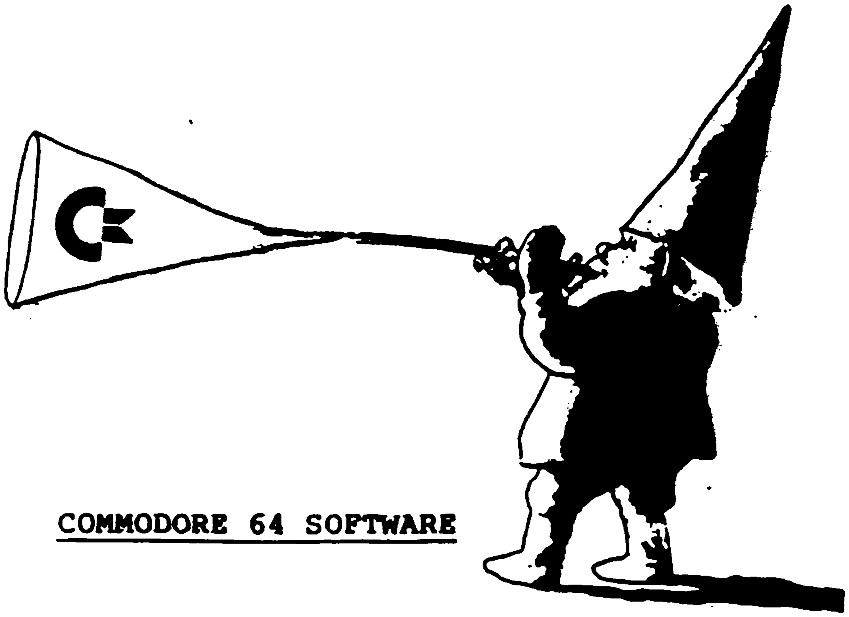
QUICK-STOCK PROGRAM

SOFTWARE DIRECTIONS



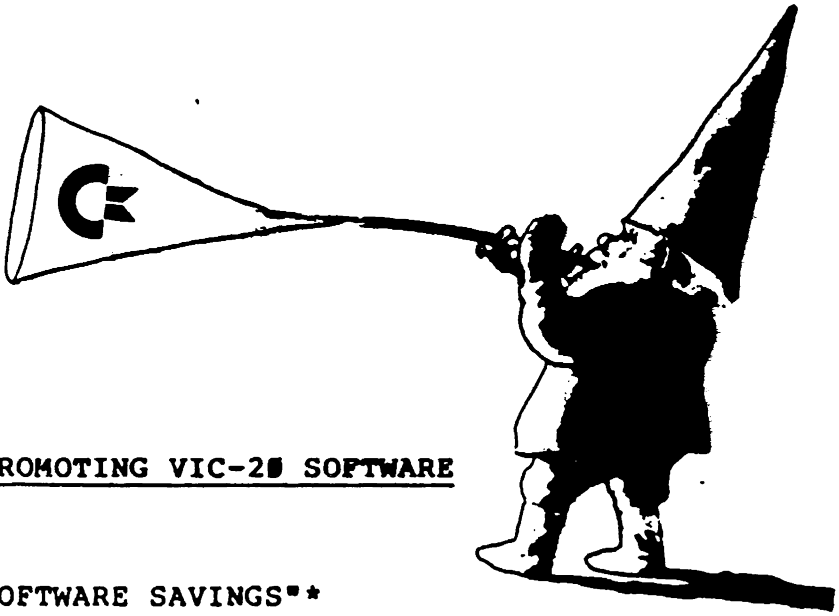
GENERAL MARKETING

- STANDARDIZE NEW PRODUCT INTRODUCTION
- "QUICK STOCK" PROGRAM (Under development)
- LITERATURE IN CPU/PERIPHERAL BOXES
- COMMODORE "GOLD HIT" SOFTWARE
- USE COMMODORE MAGAZINES TO PROMOTE SOFTWARE
- PUBLIC RELATIONS
- IMPROVE/STANDARDIZE SOFTWARE PACKAGING



COMMODORE 64 SOFTWARE

- COMMODORE 64 SOFTWARE BROCHURE IN HARDWARE BOXES*
- 2-PAGE "SHOPPING GUIDE" PRINT ADS
    - Productivity Software ("Indispensable" Software)
    - Education Software ("Education Adds Up")
    - Recreation and Games ("The Best Games In Town")
    - Programming Aids ("Teach Yourself Programming")
- NEWS RELEASES ALL C64 SOFTWARE WITH SCREEN SHOTS AND COMPETITIVE COMPARISONS (i.e. EASYSCRIPT)
- THEME LOOK IN SOFTWARE PACKAGING
    - Standard & Game Software
    - Nucleus Software
    - Educational Software
    - Programmer's Treasure Chest Series



PROMOTING VIC-20 SOFTWARE

- ADS - "SUPER SOFTWARE SAVINGS"*
  - Ad Mats
  - Counter Cards
  - TV Ads
- SOFTWARE BROCHURE IN CPU/PERIPHERAL BOXES*
- BUNDLE PRICE-PROTECTED SOFTWARE IN THEME PACKS
  - Force dealers to accept VIC software in "packs"...
  - Winners Pack (SuperSlot,Draw Poker,Pinball)
  - Children's Fun Pack (Home Babysitter,Bingo Math, Mole Attack, Sky Is Falling)
  - Space Pack (Avenger,Gorf,Omega Race,Jupiter Lander)
  - Strategy Pack (4 Scott Adams Adventure games)
  - Programmers Pack (ProgrammrsAid,SuperExpander,8K RAM)
- COUNTERTOP SHIPPER/DISPLAY PACK (UP TO 100 TITLES)
- IN-STORE POSTERS PROMOTING SOFTWARE

SALES & DISTRIBUTION

The following sections outline specific action items we intend to implement. Every item focuses on one target...to MOVE SOFTWARE!

Improving Software Sales

- **Add Software Salespeople to current sales staff**
- **Give incentives to salespeople selling most software**
- **Force sales staff to sell products we have IN STOCK**
- **Hold monthly briefings for Commodore sales staff**
- **Require dealers to buy 20% software with hardware**
- **Implement "QUICK-STOCK" plan (add to dealer agreement either as standard clause or as requirement for "price-protected" dealers)...automatic shipment of shelf pack (6 or 10) on all new titles**
- **Design and sell "packed" disposable countertop software dispenser/displays for theme/seasonal promotions**
- **Notify dealers/distributors promptly if shipments are delayed; offer substitutes from titles in stock**
- **Software Division will rate new software "A-B-C" to determine introductory quantities...Sales Division will forecast/request quantities beyond initial run:**

A Rating - Build 10K in U.S. (or 10K Hot Lot if ROM)
Initial quantity: 100K in Hong Kong
Expect 3-6 month sales = over 100K
Major push/pre-sell/demos/advertising

B Rating - Build 5K in U.S. (or 5K Hot Lot if ROM)
Initial quantity: 75K in Hong Kong
Expect 3-6 month sales = 50K-100K
Include in "category" advertising

C Rating - Build NONE in U.S.
Initial quantity: 50K - Hong Kong
Future orders depend on sales pace

Software Distribution

- Get closer to distributors to identify problems, gather market intelligence and be more effective
- Hold semi-annual briefings for distributors/reps
- Find better ways to pass product information to individual dealers served by distributors
- Sign up new software specialty distributors such as Softsel and EduCat (education software)
- Help major book dealers such as Barnes & Noble get into the software business and turn selected bookstore chains into direct dealers
- Expand college bookstore distribution channels
- Negotiate a sales arrangement with American Express
- Convert Howard Sams to software distributor
- Analyze field inventory information and persuade poor distributors/dealers to push software
- Use Software Centers in West Chester, Dallas and Santa Clara to measure "local" store sales

SYSTEM DIRECTIONS

- INTEGRATED (PET -- Z8000) & PORTABLE
- COMPONENT/DIGITAL TV (BUILT-IN CPU)
- BUILT-IN SOFTWARE/SPEECH
- CREDIT CARD SOFTWARE
- TOUCH SCREEN
- COMMODORE SUPER OPERATING SYSTEM
- 16/32 BIT WITH SPEED/REAL TIME GRAPHICS
- FAST STORAGE (DISK)
- LOW-PRICE LETTER-QUALITY PRINTER
- FRIENDLY USER PORT

INTERNATIONAL
SOFTWARE
SYMPOSIUM

- GENERATED SOFTWARE ADVERTISING IDEAS (Compare own products)
- FOREIGN LANGUAGE SOFTWARE CONVERSIONS (Italian LOGO)
- DISCUSSED FOREIGN LANGUAGE SPEECH & HELP SCREENS
- DEMONSTRATED TALKING GERMAN LANGUAGE DISK (Positive response)
- SOLICITED OPERATING SYSTEM IDEAS (Z8000)
- DISCUSSED BEST SELLING GAMES & PACKAGING
- GENERATED BEST MAGIC DESK FEEDBACK SINCE PROJECT STARTED
- INITIATED INTERNATIONAL SOFTWARE "COMMITTEE"
- INCLUDE PAL TESTING IN U.S. SOFTWARE TEST PROCEDURE
- DETAILED REVIEW & SPEECH INPUT FOR SUPERSCRIPT/SUPERBASE
- NEGOTIATED SUNSHINE BOOK SERIES

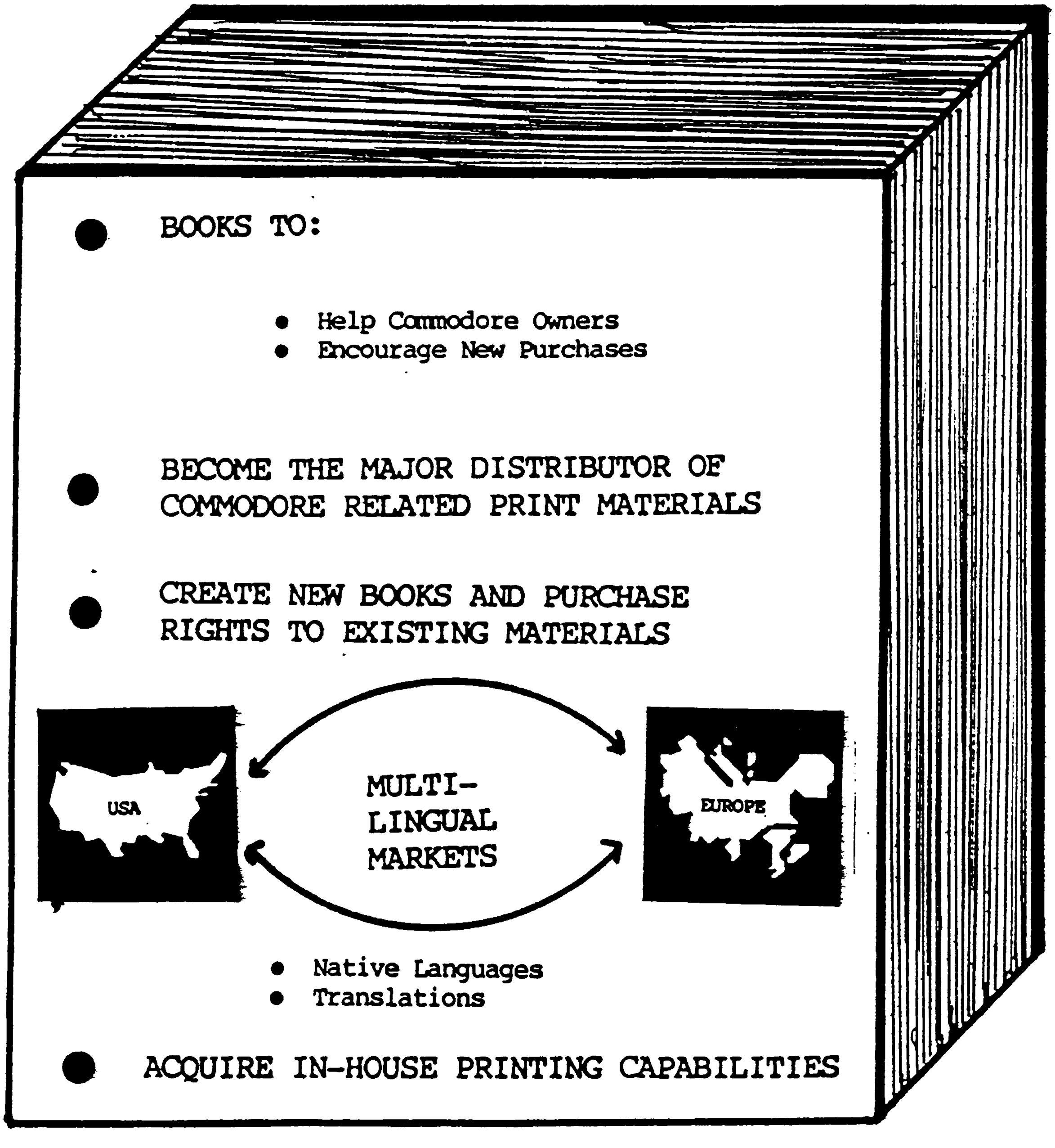
Commodore
is
in the
Book
Business

PUBLICATIONS

- Programmer's Reference Guides (Best Selling in Computer Industry)
- Self-Teaching Programming Books
- Book and Software Sets
- Micro-Reference Guides
- Software Encyclopedias

COMMODORE SOFTWARE STRATEGIES

PUBLICATIONS



- BOOKS TO:
  - Help Commodore Owners
  - Encourage New Purchases
- BECOME THE MAJOR DISTRIBUTOR OF COMMODORE RELATED PRINT MATERIALS
- CREATE NEW BOOKS AND PURCHASE RIGHTS TO EXISTING MATERIALS

MULTI-LINGUAL MARKETS

- Native Languages
- Translations

- ACQUIRE IN-HOUSE PRINTING CAPABILITIES

PRODUCTIVITY SOFTWARE

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PRODUCTIVITY SOFTWARE

* Business Software
* Word Processing
* Spreadsheets
* Database Managers
* Graphics
* Telecommunications
* Languages

* Puts the computer
  to work for you.

SOFTWARE SELLS HARDWARE

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PRODUCTIVITY SOFTWARE

* The only real reason to buy a computer

* Not subject to emotional swings

* Reinforces a positive purchase

* Expect usefulness

SOFTWARE SELLS HARDWARE

PRODUCTIVITY SOFTWARE

Who buys it?

EVERYBODY

SOFTWARE STRATEGY

- * Know the market
- * Identify and anticipate trends
- * Develop Software Product Matrix
- * Acquire products to fill gaps
- * Monitor sales and evaluate line

SOFTWARE STRATEGY

* Know the market

  - Easy to use
  - Integrated
  - Windowing
  - Graphics
  - Word Processing
    Spreadsheets
    Databases

SOFTWARE STRATEGY

* Software Matrix

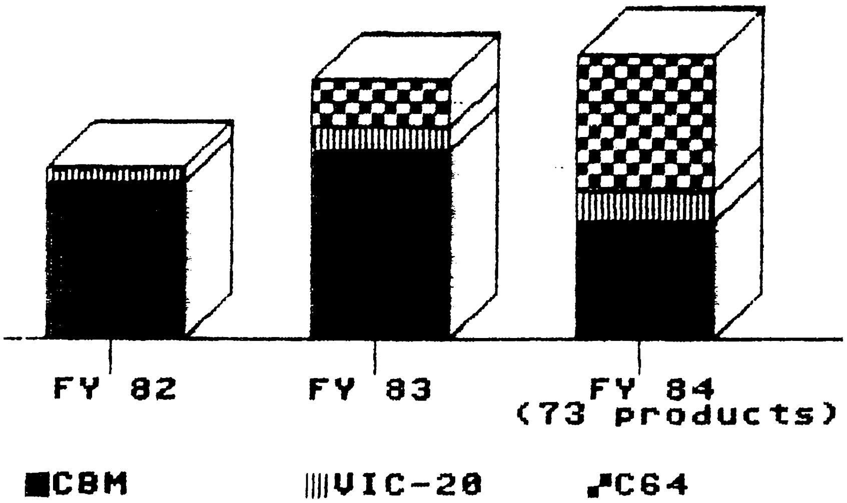
  - Identify product areas
  - Track progress easily
  - Organized by hardware
  - Organize product development

SOFTWARE STRATEGY

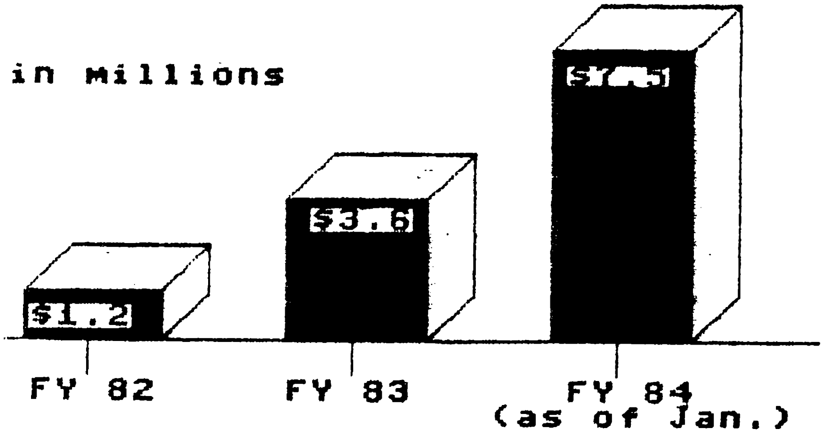
* Acquire Products

  - Use third party developers
  - International resources
  - Non Commodore Software
  - Profit center approach

Productivity Software Products



Productivity Software Sales



THE FUTURE

- Set trends; don't follow them
- Participate in promotion and distribution
- The Right Stuff

PRODUCT PLANNING STRATEGY

- KNOW THE MARKETPLACE
- IDENTIFY THE TRENDS
- UTILIZE THE RECREATIONAL SOFTWARE PLANNING MATRIX
- FILL THE GAPS
- UTILIZE OUTSIDE DEVELOPERS
- MONITOR SALES CLOSELY
- CONSTANTLY SHAPE AND PRUNE THE PRODUCT LINE

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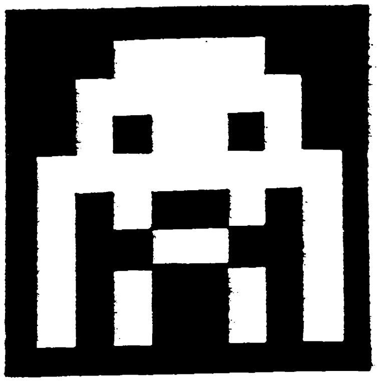
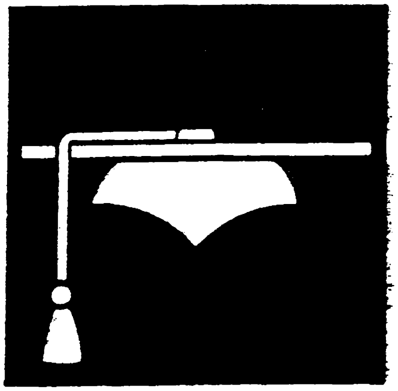
WHAT IS RECREATIONAL SOFTWARE?

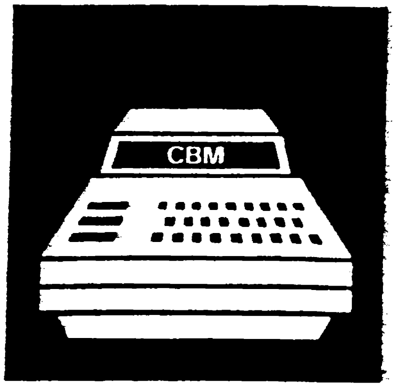
ENTERTAINMENT





EDUCATIONAL

PRODUCTIVE



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FOUR MAJOR RECREATIONAL PRODUCT CATEGORIES

☞ GAMES

☞ ART

☞ MUSIC

☞ LIFESTYLES

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MAJOR GAME CATEGORIES

ARCADE

INTELLECTUAL/STRATEGY

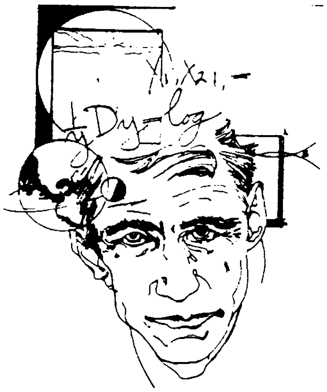
SPORTS

CHILDRENS

ADVENTURE

STRATEGY ARCADE

SIMULATIONS



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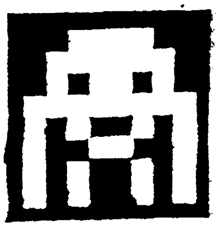
WHY IS RECREATIONAL SOFTWARE IMPORTANT?

Constitutes more than half of our software sales in both volume and dollars

Almost all microcomputer purchasers buy entertainment programs



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IMPLEMENTATION OF THE PLAN

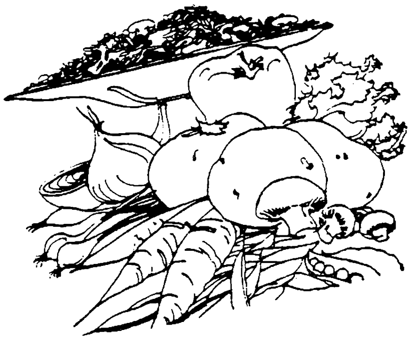
SOURCES OF SOFTWARE

- EMPHASIS ON OUTSIDE DEVELOPERS
- IN-HOUSE STAFF
- TAKE ADVANTAGE OF COMMODORE BEING AN INTERNATIONAL COMPANY

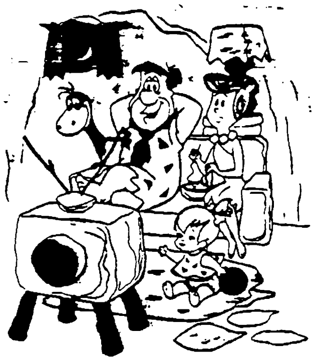
PLANNING MATRIX

AREAS TO FOCUS

- ☞ SIMULATIONS
- ☞ STRATEGY ARCADE
- ☞ LIFESTYLES

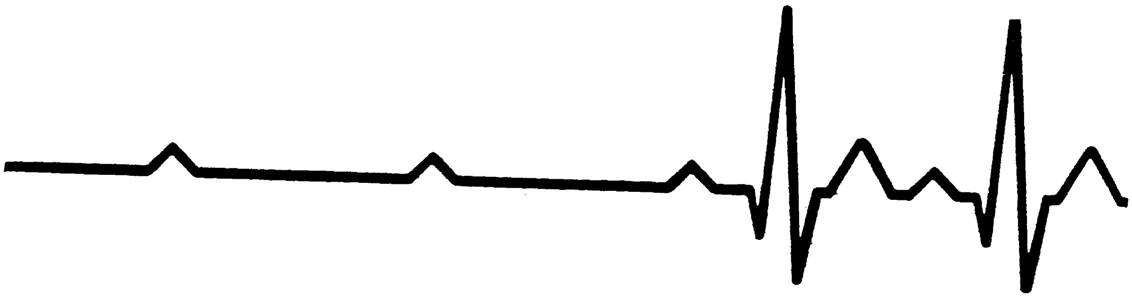


- ☞ ART & MUSIC



The Flintstones

- ☞ SPORTS
- ☞ GRAPHIC ADVENTURE



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LICENSES:

IMMEDIATE RECOGNITION

AND INITIAL SALES

MARVEL®

1983 MARVEL COMICS GROUP

TM

M

GNOMES

MARVEL

THE FANTASTIC WORLD OF

HANNA-BARBERA

ENTERPRISES

HANNA BARBARA

Scooby Doo.

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SUMMARY

GOAL: #1 IN SOFTWARE

RECREATION IS CRITICAL TO
THE SUCCESS OF SOFTWARE

PLANNING STRATEGY:

KNOW THE MARKETPLACE & TRENDS AND
FOCUS OUR RESOURCES FOR THE FUTURE

MAKE IT HAPPEN!

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GAMES & RECREATION SOFTWARE MATRIX

	VIC 20	COMMODORE 64	COMMODORE 264
SPECIFICATIONS	5K 22 Column Color 6502	64K 40 Column Color 6510	64K 40 Column Color 6510
ADVENTURE GAME SERIES	ADVENTURE LAND PIRATE COVE THE COUNT VOODOO CASTLE MISSION IMPOSSIBLE	ZORK I ZORK II ZORK III SUSPENDED STARCROSS DEADLINE STRANGE ODYSSEY* GHOST TOWN* MYSTERY FUNHOUSE*	ZORK I* ZORK II* ZORK III* SUSPENDED* STARCROSS* DEADLINE* ADVENTURELAND* PIRATE ADVENTURE* ATOMIC ADVENTURE* THE COUNT* STRANGE ODYSSEY* MYSTERY FUNHOUSE* PYRAMID OF DOOM*
GAMES & RECREATION ON TAPE	RECREATION 6-PACK SAMPLER 6-PACK	CSET BONUS PAK	CASSETTE 6-PACK*
SPORTS GAMES		INT'L SOCCER FOOTBALL* BASKETBALL* TENNIS*	INT'L SOCCER*
GRAPHICS SERIES	COMMODORE ARTIST	MICRO ILLUSTRATOR*	MICRO ILLUSTRATOR*
MUSIC SERIES		MUSIC MACHINE MUSIC COMPOSER	
LIFESTYLE SERIES	VIDUZZLES QUIZMASTER KNOW YR OWN PERS KNOW YR CHILDS IQ KNOW YR OWN IQ MENU PLANNER	VIDUZZLES MICRO COOKBOOK* QUIZMASTER KNOW YOUR OWN IQ KNOW YOUR CHILD'S IQ KNOW YOUR OWN PERS MENU PLANNER	VIDUZZLES*

(Product Under Development

GAMES & RECREATION SOFTWARE MATRIX

	VIC 20	COMMODORE 64	COMMODORE 264
SPECIFICATIONS	5K 22 Column Color 6502	64K 40 Column Color 6510	64K 40 Column Color 6510
BALLEY MIDWAY ARCADE GAMES	GORF OMEGA RACE CLOWNS SEAWOLF	GORF OMEGA RACE CLOWNS SEAWOLF KICKMAN WIZARD OF WOR BLUEPRINT SOLAR FOX SATAN'S HOLLOW* LAZARIAN	GORF* WIZARD OF WOR*
VIDEO ARCADE SERIES	BIRTHDAY GAME* JUPITER LANDER RADAR RATRACE SUPERSMASH VIC AVENGER MIDNIGHT DRIVE PINBALL SPEC STAR POST COSMIC CRUNCHER RAID ON FORT KNOX SUPER ALIEN MONEY WARS SUPERSLOT DRAW POKER	BIRTHDAY GAME* SPIDER SNARES* TRIAD* JUPITER LANDER RADAR RATRACE SUPERSMASH AVENGERS LEMANS PINBALL SPEC STAR POST FROGMASTER DRAGONSDEN	TRIAD*
CHILDREN'S GAMES	NUMBER NABBER MOLE ATTACK THE SKY IS FALLING TOOTH INVADERS	NUMBER NABBER TOOTH INVADERS	TOOTH INVADERS*
INTELLECTUAL GAMES	SARGON CHESS II	CHESS* CHECKERS* BACKGAMMON* ODIN*	CHESS*
STRATEGY/ARCADE	JACK ATTACK	JACK ATTACK STAR RANGER	JACK ATTACK*

* Product Under Development

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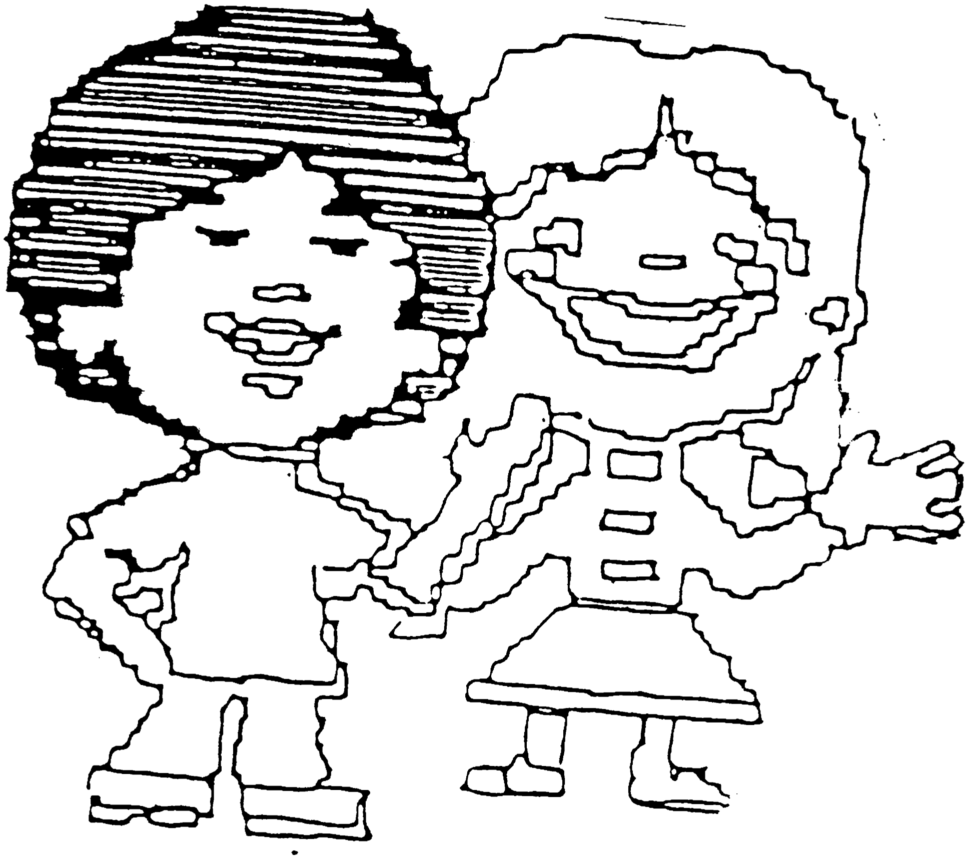


EDUCATIONAL SOFTWARE

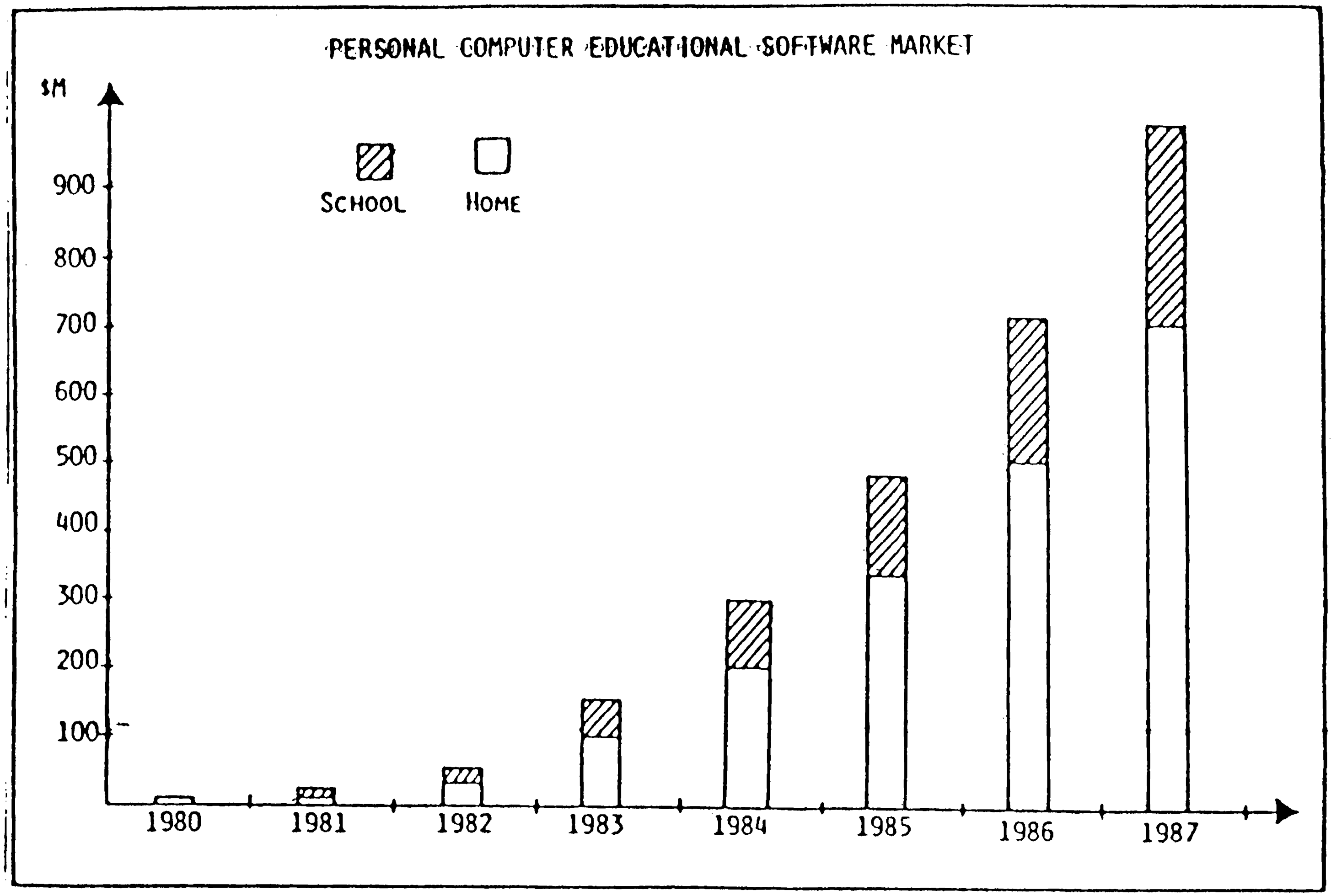
WHY?

A

GROWTH

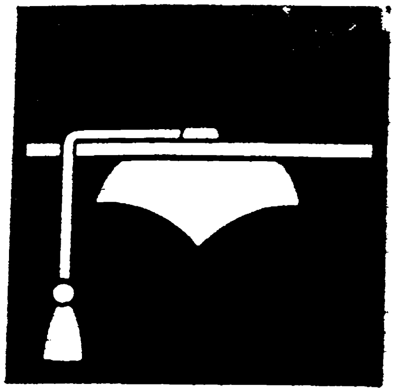
MARKET

$



SOARING SALES in the home educational software market will more than double in 1983, double again in 1984 and exceed $300 million in 1985, says Future Computing.

COMMODORE SOFTWARE OVERVIEW



EDUCATION

- **Most Important Area**
  - LARGEST GROWTH POTENTIAL
  - SELF-GENERATING MARKET
    - Children
    - Youth
    - Adults
- **Key Directions**
  - MAKE LEARNING ENJOYABLE
  - CAPTURE THE BEST DEVELOPERS
  - SELL THE COMMODORE NAME
- **Listen to the Market**
  - REVIEW PRODUCTS
  - IDENTIFY HOT SELLERS
  - PREDICT LONG-TERM SELLERS

EDUCATIONAL SOFTWARE GROUP

WHO WE ARE

- A TEAM OF 4 PEOPLE
- GROUP FORMED IN JULY 1983

WHAT WE DO

- PRIMARY FUNCTIONS:
    - ACQUIRE EDUCATIONAL PRODUCTS
    - MANAGE OUTSIDE DEVELOPERS
    - WRITE DOCUMENTATION
    - INTEGRATE PROGRAMMING CHANGES TO PURCHASED PRODUCTS
- OTHER FUNCTIONS INCLUDE:
    - ASSIST MARKETING/SALES
    - ASSIST IN MANAGEMENT AND OPERATIONS

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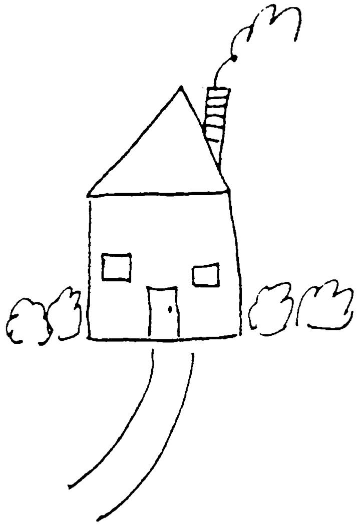
CURRENTLY, TWO INTERCONNECTED MARKETS



HOME

SCHOOL

EVENTUALLY

EDUCATION IN THE WORKPLACE

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AN OVERVIEW OF THE BUYING AUDIENCE

FOR	WHO BUYS	WHAT
KIDS	- PARENTS, GRANDPARENTS RELATIVES	- FUN TYPE PRODUCTS
		- BASIC SKILLS
		- "GAME" FORMAT
TEENS	- PARENTS, GRANDPARENTS RELATIVES	- "HELP TO GET AHEAD"
	- SELF	- EXTRINSIC MOTIVATORS
ADULTS	- SELF	- IMPROVE POSITION
	- EMPLOYER	- IMPROVE PRODUCTIVITY

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WHY DO PARENTS BUY COMPUTERS?

- PARENTS WANT THEIR CHILDREN TO "GET AHEAD" IN LIFE
- PARENTS WANT THEIR CHILDREN TO ENJOY WHAT THEY ARE DOING.
- PARENTS WANT TO APPEAR KNOWLEDGABLE WHEN WORKING WITH THEIR CHILDREN ON A COMPUTER.
- PARENTS WANT TO SEE THEIR CHILDREN DEMONSTRATE WHAT THEY HAVE LEARNED.

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GENERAL MARKET STRATEGIES

I. - GAIN SHELF SPACE WITH NUMEROUS GOOD PRODUCTS

- FEWER, BUT HIGH IMPACT PRODUCTS
- REPLACE PRODUCT WITH BETTER PRODUCT

II. - ANTICIPATE MARKET CHANGES

- "HOT PRODUCTS"
    - OBTAIN OR COPY AND IMPROVE
- PROJECT NEXT YEARS SELLERS

III. - NEW HARDWARE

- ONLY HIGHEST SELLING PRODUCTS
- CONVERSIONS AVAILABLE WHEN MACHINE INTRODUCED

IV. - AFTERMARKETS

- VIC 20

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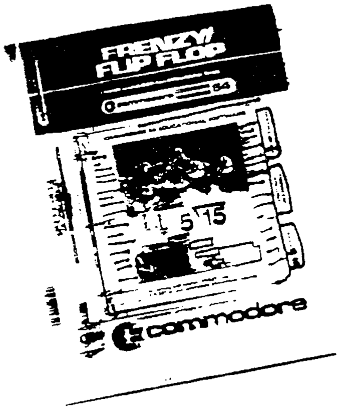
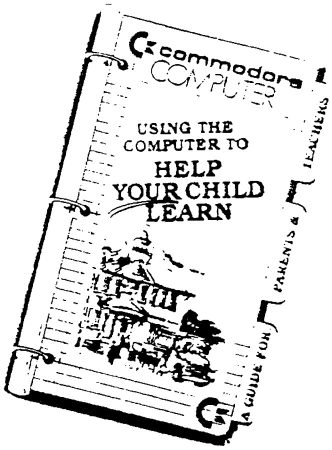
SALES AND MARKETING ASSISTANCE

- SPECIFICATION SHEETS
- SCHOOL SUPPLY CATALOGS
- "FRIENDLY" DOCUMENTATION
- PARENT AND TEACHER GUIDES
- SPECIAL PROMOTIONS (LOGO POSTER)
- NEW BOX COPY/DESIGNS
- NEA REVIEW/ENDORSEMENTS
- MAGAZINE REVIEWS
- SERIES APPROACH
- COMMODORE KIDS/BRAINY BUNCH
- SCREEN ART - NEW INTRO SCREEN
- CLEAR PRODUCT STRATEGY
- COMMODORE MAGAZINE
  - ADVERTISEMENTS
  - ARTICLES ON PRODUCTS





EDUCATIONAL SOFTWARE

GROWTH

NOTES: TO DATE 11 products released to production

67 products in development plus 20 MECC products

YEAR	NUMBER OF TITLES ON MARKET	NUMBER SOLD	$ AMOUNT OF SALES
FULL YEAR 1982-83	5 TITLES	123,578	$1,736,787.28
1/2 YEAR CURRENT YEAR TO DATE WITHOUT PUBLIC DOMAIN SOFTWARE	16 TITLES 220% INCREASE	404,717 227% INCREASE	$3,643,753.75 110% INCREASE
1/2 YEAR CURRENT YEAR TO DATE WITH PUBLIC DOMAIN SOFTWARE	43 TITLES 760% INCREASE	791,348 540% INCREASE	$4,666,620.40 169% INCREASE

TED FAMILY TREE

```
******************   All the features of the 264 plus:
*                *    Numeric keypad
*  Commodore V364 *   Built in speech capability
*                *    64K of RAM, 48K-96K of ROM
******************
        *
        *
******************   All the features of the 232 plus:
*                *    60K user memory
*  Commodore 264 *    Built in application software
*                *    0-19.2KB RS232 MODEM port
******************    64K of RAM, 32K-64K of ROM
        *
        *
******************   All the features of the 216 plus:
*                *    28K user memory
*  Commodore 232 *    32K of RAM, 32K of ROM
*                *
******************
        *
        *
******************   All the features of the 116 plus:
*                *    Full typewriter style keyboard
*  Commodore 216 *
*                *
******************
        *
        *
******************    Advanced BASIC 3.5 (over 75 commands)
*                *    High resolution graphics (320 by 200 dots)
*  Commodore 116 *    Screen window capability
*                *    HELP key
******************    Programmable function keys
                      Built in machine language monitor
                      121 colors
                      40 columns by 25 lines for text
                      2 sound generators
                      16K of RAM, 32K of ROM
                      Uses cartridge, tape or disk for programs
```

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OUTLINE

I. WHAT IS THE TED FAMILY ?
  A. Family Tree.
  B. Features of the Commodore 264.
  C. Comparison with the Commodore 64.
    1. Advantages.
    2. Disadvantages.
  D. Compatibility with other Commodore products.

II. SOFTWARE FOR THE TED FAMILY.
  A. Approach:
    1. Convert the best of the Commodore 64 software.
    2. Work extensively with 3rd party developers.
  B. Software available at introduction.
    1. Productivity.
    2. Recreational.
    3. Educational.
  C. Software available later.

III. FUTURE OF THE TED FAMILY
  A. Importance of a computer family.
  B. Expandability.
  C. Built in software.

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FEATURES OF THE COMMODORE 264

- Advanced BASIC 3.5 (over 75 commands)
- Built in applications software
- Full size keyboard
- Advanced screen editor with window capability
- 64K RAM standard (60K available to user)
- RAM and ROM expandable
- HELP key
- 0-19.2KB RS232 MODEM port
- Programmable function keys
- 32K ROM standard
  up to 32K additional ROM for built in software
- 40 columns by 25 lines
- 121 colors
- 320 by 200 high resolution mode. Split screen text/hires graphics
- 2 sound channels
- Upper & lower case letters, numbers and symbols. Reverse and flashing characters. Full PET graphics character set.
- Serial port, 2 joystick ports, datassette port, RF output, monitor output

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COMPARISON BETWEEN THE COMMODORE 264 AND 64

1. ADVANTAGES

- Advanced BASIC 3.5 with graphic commands
  - sound commands
  - disk commands
  - programmers aid commands
  - structured programming commands

- Built in applications software

- Built in machine language monitor

- Advanced screen editor with window capabilitty

- 121 colors (vs 16 colors)

- 0-19.2KB RS232 MODEM port (vs 0-1200)

- HELP key

- Programmable function keys

2. DISADVANTAGES

- No sprites

- Limited sound

commodore
COMPUTER

COMPATIBILITY/INCOMPATIBILITY WITH OTHER COMMODORE PRODUCTS

COMPATIBILITY

- 4040 Compatible Disk Format

- KERNAL Jump Table
- Compatible BASIC
- Similar Zero Page

- Serial Bus: Can use some of the same peripherals
  - 1541 Disk Drive
  - 1520, MPS-801 printers
- Other peripherals
  - 1702 Color Monitor

INCOMPATIBILY

- TED Datassette
- TED Joysticks
- Tape format

- No Sprites
- Limited Sound

- Serial Bus
  - 1525, 1526

- Other peripherals
  - RS232C Adapter, VIC MODEM

SOFTWARE FOR THE TED FAMILY

A. Approach

1. Convert the best of the Commodore 64 software
2. 3rd party developers

B. Software available at introduction

C264 SOFTWARE STATUS

PROJECT	MEDIA	ROM SIZE	MIN RAM REQUIRED	PERCENTAGE COMPLETE	EPROM RELEASE
Adventures (1,2,3,5,6,7)	(C)		16K	100%	READY **
Gorf	(C-V)	16K			Mar 31, 1984
Micro Illustrator	(fk-C)	32K	32K	90%	Apr 2, 1984
Infocom (6)	(D)		64K	100%	READY **
Jack Attack	(C)	16K	16K	85%	READY **
Tooth Invaders	(C)	16K		85%	Mar 1, 1984
Triad	(C)	32K			
Viduzzles	(C)	16K		100%	Feb 18, 1984
Wizard of Wor	(C-V)	16K	16K		Mar 31, 1984
Cassettes	(T)			100%	READY **
Chess	(C)	16K			NEW PROJECT
C'est La Vie	(C)	32K		90%	Mar 1, 1984
Astrology					NEW PROJECT
* Logo	(fk-C-V)	32K	64K	90%	Feb 20, 1984
PILOT II	(fk-C)	16K	16K	90%	Feb 20, 1984
Imagine	(D)	---	64K		NEW PROJECT
Speed Reader II	(D)				NEW PROJECT
Introduction to BASIC	(T/D)				(CBM-UK)
Battling Bugs/Concentration	(D)			65%	
Alien Counter/Space Flash	(D)			65%	
Number Gulper	(C)	16K			(CBM-UK)
Early Reader	(T/D-V)				(CBM-UK)
Easy Match/Easy Count	(D)				
Number Cruncher	(D)				
* Commodore 3+1	(fk-C)	32K		90%	Feb 18, 1984
* Easycalc 264	(fk-C)	32K		90%	Mar 2, 1984
* SuperScript	(fk-C-V)	32K	16K	99%	Feb 20, 1984
* Magic Desk	(fk-C-V)	32K		85%	
Com264	(fk-C)	8K	16K	90%	
Financial Advisor	(fk-C)	16K	32K	100%	READY **
The Manager	(D)			--	May 2, 1984
EasyFinance	(D)				NEW PROJECT
UCSD PASCAL					NEW PROJECT
Business Graphics Package	(D)				NEW PROJECT
B/GRAPH					NEW PROJECT

(fk)	means function key software.
(C)	means cartridge program.
(D)	means disk program.
(T)	means tape program.
(V)	indicated program can use the speech capability.

The size of the program is given in bytes.

ROMs 4-8 weeks after EPROM release.
RAM REQUIIRED cannot be given in all cases until the 16K computer is available
* Indicates possible built in software.

** NOTE: NO EPROM RELEASE IS POSSIBLE UNTIL TWO WEEKS AFTER THE RELEASE OF THE KERNAL AND BASIC.

TED SOFTWARE AVAILABLE LATER

PRODUCTIVITY SOFTWARE

The Manager	Bahamas Software
Assembler Development System	Commodore
General Ledger	InfoDesigns
Acounts Receivable	InfoDesigns
Acounts Payable	InfoDesigns
Inventory	InfoDesigns
Payroll	InfoDesigns
Order Entry	InfoDesigns
EasySchedule	Commodore Software

EDUCATIONAL SOFTWARE

- Introduction to BASIC
- Milliken Series Programs
- KinderConcepts programs
- PLATO communications program
- PLATO Educational programs

RECREATIONAL SOFTWARE

GORF	Commodore Software
Wizard Of WOR	Commodore Software
Triad	Adventure International
Chess	
Astrology	

commodore
COMPUTER

III. FUTURE OF THE TED FAMILY

A. IMPORTANCE OF A COMPATIBLE COMPUTER LINE.

B. EXPANDABILITY.

C. BUILT IN SOFTWARE.

OPERATING SYSTEMS

OVERVIEW OF GROUP RESPONSIBILITIES

RELEASED PRODUCT SUPPORT

- VIC-20 COMPUTER (BASIC/KERNAL)
- COMMODORE 64 COMPUTER (BASIC/KERNAL)
- COMMODORE 64 CP/M MODULE (CP/M 2.2)
- B-SERIES COMPUTERS (BASIC/KERNAL)
- BX-SERIES (CP/M-86) COMPUTER
- 1541 DISK
- <40XX/80XX + IEEE DOS UNITS>

DESIGN AND DEVELOPMENT PROJECTS

- TED COMPUTERS (BASIC/MONITOR/KERNAL)
- TED DISK UNITS
- BX-SERIES (MSDOS 1.25/2.0) COMPUTER
- Z8000 SYSTEM (COHERENT)

PERIPHERAL SUPPORT

- SUPPORT JAPAN DEVELOPMENT EFFORTS
- SET INTERFACE STANDARDS
- DEBUG INTERFACE PROBLEMS

INTERNATIONAL SUPPORT

- TELEVISION DISPLAY (PAL / NTSC) SUPPORTS
- KEYBOARD AND CHARACTER SET STANDARDS
  - SET USA AND UK
  - AID EUROPEAN DEVELOPMENT GROUPS
  - REVIEW AND APPROVE FORIEGN IMPLEMENTATIONS

APPLICATION DEVELOPMENT SUPPORT

- SOFTWARE ENGINEERING DOCUMENTATION
- PRE-RELEASE EPROM SUPPORT
- SOURCE LISTING
- REVIEW OF MANUALS

NEW PRODUCT DEFINITIONS

- REVIEW AND SPECIFY NEW CIRCUIT DESIGNS
- REVIEW NEW HARDWARE PROPOSALS
- SUPPLY OS SOFTWARE SPECIFICATIONS / SCHEDULING
- APPROVE PRODUCT SPECIFICATIONS

OPERATING SYSTEMS SOFTWARE

COMMODORE OPERATING SYSTEM LEVELS

SINGLE-USER SINGLE-TASKING

6502 BASED

PET BASIC V2 8032 BASIC V4 (32K RAM)

VIC-20 AND COMMODORE 64 KERNAL (64K RAM)

TED KERNAL (64K RAM + EXTENDED ROM BANKING)

B-SERIES KERNAL (1Mb TOTAL)

Z80 BASED

CP/M 2.2 (64K RAM)

8086/88 BASED

CP/M-86 V1.0 (1Mb TOTAL)

MSDOS V1.25 (1Mb TOTAL)

SINGLE-USER MULTI-TASK

8086/88 BASED

MSDOS 2.0 * FOREGROUND / BACKGROUND SPOOLER (1Mb TOTAL)

CCP/M * 4 INDEPENDENT TASKS (1Mb TOTAL)

Z8000 BASED

COHERENT NON-MULTI USER MODE (8Mb TOTAL)

MULTI-USER MULTI-TASK

Z8000 BASED

COHERENT MULTI-USER MODE - LIMITED BY RESOURCES (8Mb TOTAL)

NOTE: WITH MSDOS 2.0 AND CCP/M COMMODORE HAS THE RIGHT TO UTILIZE, BUT THE CONVERSION TASKS HAVE NOT BEGUN.

OPERATING SYSTEMS

RELEASED PRODUCT	RESPONSIBILITIES	PERSONNEL
VIC-20	BASIC/KERNAL SUPPORT	BOB RUSSELL
COMMODORE-64	BASIC/KERNAL SUPPORT	BOB RUSSELL
	Z80 CP/M 2.2	TERRY RYAN FRED BOWEN
	VSP SUPPORT	FRED BOWEN
1541 DISK	INTERFACE	BOB RUSSELL
	DOS CODE	DAVE SIRACUSA (BENNY PRUDEN)
B-SERIES	BASIC/KERNAL SUPPORT	FRED BOWEN BOB RUSSELL MADELINE SHAW

DEVELOPMENT PROJECTS

TED COMPUTER	BASIC/MONITOR	TERRY RYAN
	KERNAL/INTERFACES	JOHN COOPER
	DEBUG/SUPPORT	FRED BOWEN
TED DISK	INTERFACE/DOS	DAVE SIRACUSA
CP/M-86	ALL	ROY SCHILLING
MSDOS 1.25	ALL	ROY SCHILLING
Z8000	OVERALL REVIEW/COHERENT	MADELINE SHAW
	DISPLAY/DIAGNOSTICS	PETER BOWMAN
	FLOPPY DISK/COMMUNICATIONS	DAVE MONE'
	HARD DISK/SOUND	LARRY LEVIN
	BASIC/CBM SHELL	ART MORGAN
HSS DISK	INTERFACE/DOS	DAVE SIRACUSA (BENNY PRUDEN)

ADVANCED TECHNOLOGY GROUP CONTROL - NO ASSIGNED PERSONNEL CURRENTLY

LCD SYSTEM
D128 SYSTEM
65XX DMA DISK FOR Z8000 SYSTEM
IBM COMPATABLE

CURRENT STAFF

2 LEAD SENIOR SOFTWARE ENGINEERS
2 SENIOR SOFTWARE ENGINEERS
6 SOFTWARE ENGINEERS
1 JUNIOR SOFTWARE ENGINEER

OPERATING SYSTEMS

AREA OF CONCENTRATION

TED SYSTEMS (C116/C232/C264/C364 6502 BASED)

ACHEIVEMENTS

- SYSTEM FLEXABILITY
  - SOFTWARE CAN SUPPORT:
    - 16K / 32K / 48K / 64K RAM VERSIONS
    - USER PORT IF CONNECTED
    - ALL SERIAL BUS DEVICES
    - OPTIONAL TED DISK UNITS (SINGLE OR DUAL)
    - OPTIONAL 'FUNCTION KEY' SOFTWARE ROMS TO 128K
    - OPTIONAL SPEECH SOFTWARE AND HARDWARE

BASIC V3.5 (COMPATABLE WITH PET / VIC-20 / C-64)

- 64K SYSTEM HAS 60671 BYTES FREE FOR USER
- 52 NEW BASIC COMMANDS
- V4 STRING GARBAGE COLLECTION (HIGH SPEED)
- FORMATTED STRING AND VARIABLE OUTPUT
- 10 NEW DISK COMMANDS (COMPATABLE TO V4)
- VIDEO SUPPORT PACKAGE
  - SPLIT SCREEN / MULTI COLOR / HI-RESOLUTION
  - 19 NEW GRAPHIC COMMANDS
- PROGRAMMABLE FUNCTION KEYS
- SUPPORTS SPEECH COMMANDS FROM BASIC

OPERATING SYSTEM (KERNAL COMPATABLE WITH VIC-20 / C-64)

- TED DIRECT CONNECT DISK INTERFACE (TRANSFER SPEED > IEEE)
- NEW KEYBORAD FUNCTIONS (ESC, CONTROL, CURSOR, FUNCTIONS)
- 'FUNCTION-KEY' ROMS SUPPORTED
- SPEECH EXTENSIONS FOR MACHINE LANGUAGE PROGRAMMERS
- 6551 (RS232) CIRCUIT DRIVERS (ALLOWS RS232 TO 19,200 BAUD)
- SINGLE LEVEL VIDEO DISPLAY WINDOW
- NEW SCREEN EDITING ESC SEQUENCES

MACHINE LANGUAGE MONITOR

- 16 MACHINE LANGUAGE MONITOR COMMANDS

TED DISK (IEEE AND 1541 COMPATABLE DOS)

- FIXED DOS ERRORS FOUND IN 1541 SYSTEM
- CAN SUPPORT DUAL DRIVES
- FAST DATA TRANSFER SPEED
- SUPPORTS REDUCED HARDWARE LOGIC

OPERATING SYSTEMS

AREA OF CONCENTRATION

TED SYSTEM (C116/C232/C264/C364)

CURRENT EFFORTS

- CHECKING PRIOR RELEASE FOR PROBLEMS
- MODIFY CODE TO ADD C64 TYPE DATASETTE REWIND OPERATIONS
- MODIFY DATASETTE SENSE SWITCH CODE FOR NEW HARDWARE
- WORKING WITH BSW ON EUROPEAN SCREEN EDITORS
- WORKING WITH JAPAN TO ASSURE C116/C232 COMPATABILITY

CURRENT GOALS

- RELEASE TED FINAL BASIC AND KERNAL ROMS ON 2/10 FOR PRODUCTION
- RELEASE TED SINGLE DISK DOS AFTER VERIFICATION ON NEW HARDWARE

CURRENT CONCERNS

- NEW TED SINGLE DISK HARDWARE (AWAITING TAPES FOR PC)
- TED DUAL DISK HARDWARE (NOT AVALIABLE YET)
- FEATURES AFFECTED BY EUROPEAN EDITOR IMPLEMENTATION
- SOFTWARE COMPATABILITY WITH PROPOSED TED REPLACEMENT CIRCUIT

OPERATING SYSTEMS

AREA OF CONCENTRATION

BX-SERIES CP/M-86 / MSDOS 1.25

ACHEIVEMENTS

CP/M-86 RELEASED EXCEPT FOR DOCUMENTATION

MS-DOS 1.25 RELEASED FOR BETA TESTING

128K AND 256K MEMORY SIZES SUPPORTED

SUPPORTS 4040, 8050, 8250(LP), 9060/90 DISK UNITS

SUPPORTS CBM IEEE PRINTERS

SOFTWARE RELEASED WITH CP/M-86 OPERATING SYSTEM
ASM-86 - DRI ASSEMBLER
GENCMD - DRI CONVERTS .HEX FILES TO .CMD FILES
DDT86 - DRI PROGRAM DEBUG UTILITY
STAT - DRI DISPLAYS DISK STATUS
PIP - DRI PERIPHERAL INTERCHANGE PROGRAM
ED - DRI LINE EDITOR
DSKMAINT - DISK MAINTENANCE UTILITY
CONFIG - MULTI-CHARACTER KEY CONFIGURATION UTILITY
SYSGEN - SYSTEM PARAMETER DEFINITION UTILITY

SOFTWARE RELEASED WITH MSDOS 1.25 OPERATING SYSTEM
MASM - MS MACRO ASSEMBLER
LINK - MS LINKER FOR OBJECT FILES
EXE2BIN - MS CONVERTS FILES TO .BIN OR .COM FORMAT
LIB - MS LIBRARIAN
CREF - MS CROSS REFERENCE
CHKDSK - RETURNS DISK AND MEMORY SIZE
SYS - MOVES SYSTEM TO SYSTEM DISK
COMMAND - MS COMMAND LINE INTERPRETER
MSDOS - MS DOS MODULE OF SYSTEM
IO.SYS - I/O SYSTEM
FILECOM - MS COMPARES TWO FILES
RDCPM - READ CP/M DISK FILES
FORMAT - FORMAT DISK
EDLIN - MS LINE EDITOR

CP/M-86 TESTING WITH DRI LANGUAGES HAS BEEN COMPLETED

PRELIMINARY TEST WITH MICROPRO APPLICATION SOFTWARE

OPERATING SYSTEMS

AREA OF CONCENTRATION

BX-SERIES CP/M-86 / MSDOS 1.25

CURRENT EFFORTS:

- MODIFY MS-DOS BIOS TO WORK WITH THE Z8-BASED INTERNAL DRIVES
- DEBUG Z8 INTERNAL DRIVE CODE
- REVIEW MANUALS
- FIND AND FIX ANY PROBLEMS (NONE KNOWN) BEFORE MANUAL RELEASES

CURRENT GOALS:

- CP/M-86 RELEASED FOR PRODUCTION WITH REVIEWED MANUAL BY 2/15
- MS-DOS WITH INTERNAL DISK DRIVES BY 2/29 FOR BETA TEST

CURRENT CONCERNS:

- INTERNAL DISK DRIVES ARE NOT FULLY FUNCTIONAL
- MANUALS MUST BE REVIEWED, CP/M-86 HAS BEEN READY SINCE 12/14
- SPEED OF CP/M-86 - SHOULD WE START PROGRAM FOR INTERNAL DRIVES?

OPERATING SYSTEMS

AREA OF CONCENTRATION

Z8000 SYSTEM

ACHEIVEMENTS:

MARK WILLIAMS CONTRACT

- HAVE WORKING IBM PC VERSION IN LAB WITH COHERENT SOURCES
- HAVE RECEIVED WORKING ALPHA TEST COPY OF COHERENT (12/5/83)
- HAVE DELIVERED SOFTWARE TO BOOT MWC COHERENT OS
- HAVE DELIVERED HARDWARE DIAGNOSTIC SOFTWARE
- HAVE DELIVERED DEVICE DRIVER ROUTINES FOR CURRENT HARDWARE
- DEVICES SUPPORTED
  - IEEE-488 BUS AND ALL CBM IEEE PERIPHERALS
  - RS232C PORTS
  - CENTRONICS PRINTER INTERFACE
  - PROTOTYPE HARD DISK / 8" BOOT UNIT
  - KEYBOARD (CURRENT HARDWARE)
  - SCREEN EDITOR (CURRENT HARDWARE)

HAVE TESTING COPY OF ROM BASIC RUNNING ON MACHINE

HAVE ROMABLE KERNAL (NOT COMPATABLE WITH COHERENT)

HAVE SPECIFICATIONS FOR CONSOLE DEVICE

CURRENT EFFORTS:

- HELPING DEBUG NEW 1024X1024 DISPLAY HARDWARE
- WORKING ON MATH PACKAGE CONVERSION FOR COHERENT
- WORKING ON DISPLAY DRIVER CODE FOR 1024X1024 DISPLAY
- WORKING ON NEW SOFTWARE SPECIFICATIONS
- WORKING WITH CHIP AND HARDWARE DESIGNERS ON NEW DISPLAY LOGIC USING 7563 DISPLAY CIRCUIT AND DEVELOPING TEST CODE
- WORKING WITH ADVANCED HARDWARE ON:
  - NEW HARD DISK DESIGN
  - NEW FLOPPY DISK DESIGNS
- HELPING PAUL GOHEEN ON TRANSPORTING SOFTWARE APPLICATIONS

OPERATING SYSTEMS

AREA OF CONCENTRATION

Z8000 SYSTEM

CURRENT GOALS:

DISPLAY A COMMODORE Z8000 SYSTEM AT HANOVER (CeBit 84) FAIRE APRIL 4-11 RUNNING COHERENT OPERATING ENVIROMENT

DISPLAY A WORKING 1024X1024 CONSOLE AT HANOVER

MOVE COHERENT SOURCES TO ZEUS MACHINES

CURRENT CONCERNS:

NO SYSTEM SPECIFICATION HAS YET BEEN APPROVED

NO SYSTEM HARDWARE SCHEDULE HAS BEEN RECEIVED

NO HARDWARE IS OPERATIONAL FOR THE FLOPPY DISK

ONLY SASI INTERFACE HARDWARE IS READY FOR THE HARD DISK

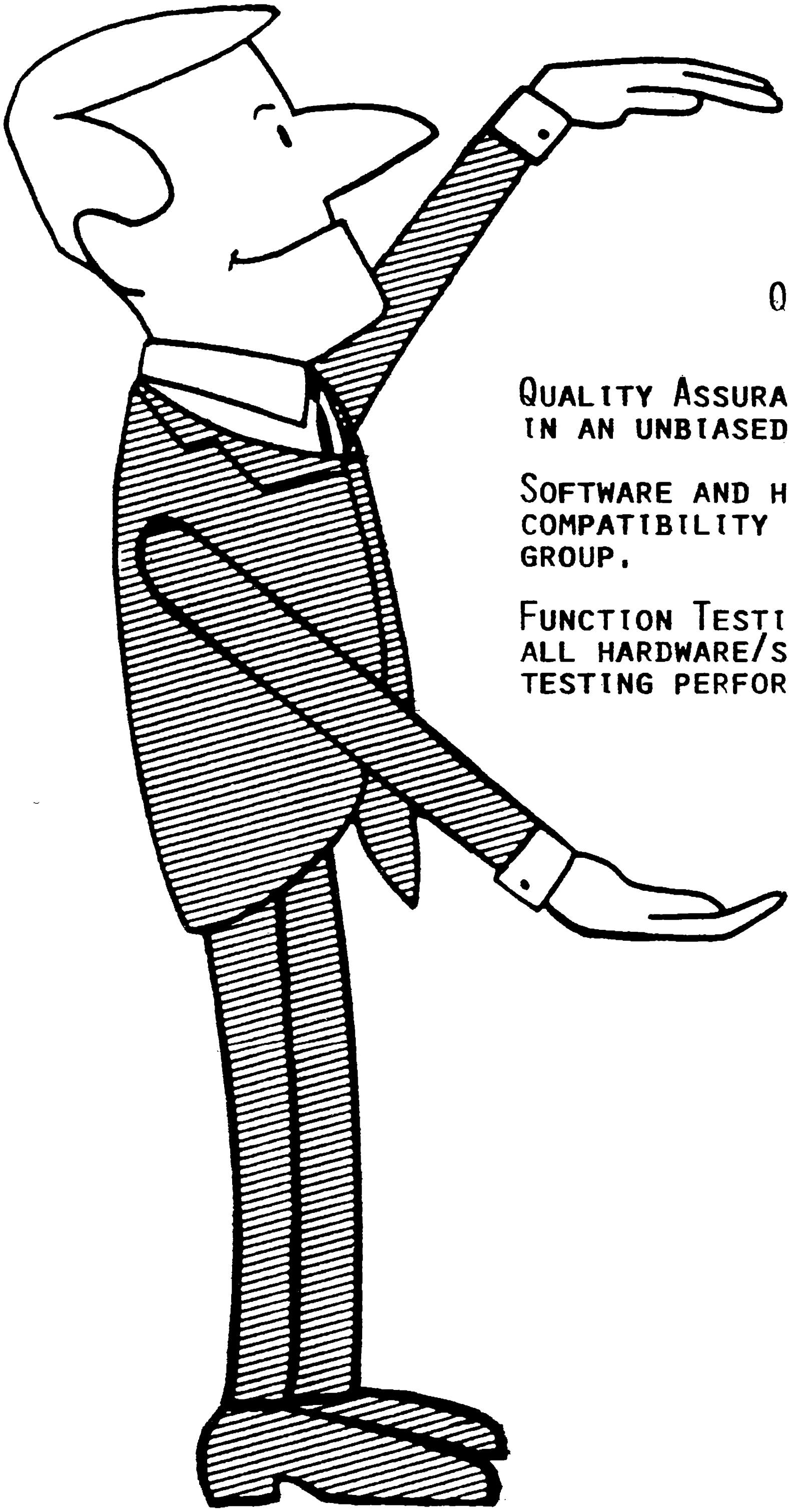
ONLY ADVANCED TECHNOLOGY PERSONNEL ARE INVOLVED WITH THE HARDWARE DESIGN AND DEVELOPMENT

COHERENT DELIVERY OF A SINGLE MMU OPERATING ENVIROMENT

OPERATING SYSTEMS

WHY OPERATING SYSTEMS GROUP REPORTS TO SOFTWARE DIVISION

1) FUTURE OF SYSTEMS => INTEGRATED SOFTWARE
2) GIVES SOFTWARE DIVISION AN INFLUENCE ON SYSTEM DESIGN
3) LEADERSHIP'S UNDERSTANDING OF SOFTWARE REQUIREMENTS
4) COMMON TOOLS REQUIRED FOR DEVELOPMENT OF SOFTWARE
5) MANUALS AND DOCUMENTATION HELP
6) PAST HISTORY
   A) PREVIOUS ENGINEERING ATTITUDE - "FIX IT IN SOFTWARE"
   B) ENGINEERING CONCERNS TYPICALLY CENTER ON HARDWARE
   C) SOFTWARE DIVISION DISCOVERED CHANGES - "AFTER THE FACT"

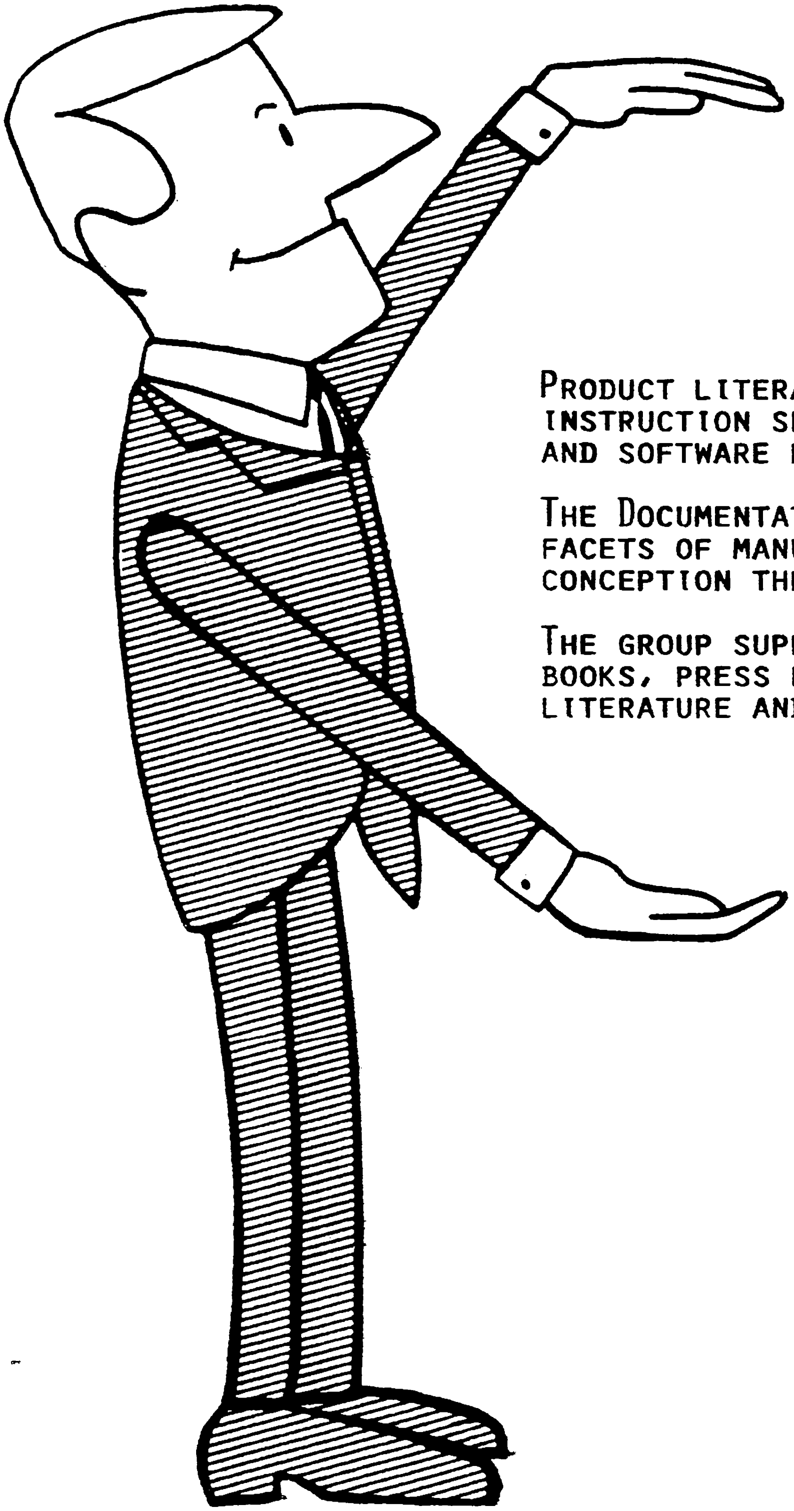


QUALITY ASSURANCE GROUP

Quality Assurance Acceptance Tests aare performed in an unbiased environment.

Software and hardwaare are tested for system compatibility with some debugging performed by the group.

Function Testing is the primary test procedure for all hardware/software products with Load and Code testing performed where applicable.



DOCUMENTATION GROUP

PRODUCT LITERATURE; DOCUMENTATION, MANUALS AND INSTRUCTION SHEETS, IS PROVIDED FOR ALL HARDWARE AND SOFTWARE PRODUCTS.

THE DOCUMENTATION GROUP CHARTER ENCOMPASSES ALL FACETS OF MANUAL PREPAARATION FROM PROJECT CONCEPTION THROUGH COMPLETED MANUAL.

THE GROUP SUPPORTS THE PREPARAATION OF COMMERCIAL BOOKS, PRESS RELEASES, PRODUCT SPEC SHEETS, SALES LITERATURE AND BOX COPY.

SOFTWARE SELLS HARDWARE

COMMODORE SOFTWARE PRODUCTION
QUICK REACTION
TO SALES NEEDS

WEST CHESTER PRODUCTION

NOVEMBER - 220,229 UNITS
DECEMBER - 653,819 UNITS

SOFTWARE SELLS HARDWARE

COMMODORE SOFTWARE PRODUCTION
QUICK REACTION
TO SALES NEEDS

	In-House Orders Exceeding Shippable Inventory (units)	Shippable Orders Not Filled (units)
November 13, 1983	700,575	309,151
November 28, 1983	591,175	348,180
January 16, 1984	235,262	310,922
February 4, 1984	194,723	228,612

SOFTWARE SELLS HARDWARE

SOFTWARE PRODUCTION SETBACK CHART

The attached chart demonstrates the flow and fastest timeline for production of software products.

DESCRIPTION:

1. Vendor/programmer submits completed product.
2. Documentation process started.
3. First draft manual and software submitted to Quality Assurance Group for function testing. Manual speced: size, graphics design, etc.

   (QA group will release project to next step or refer back to vendor/documentation for repair)
4. Manual submitted to typesetter.
5. Typeset copy proofread and galleys made.
6. Galleys proofread and mechanicals made.
7. Manual published
8. Complete Quality Assurance testing on manual and software, release software to production.
9. Product Number and UPC code assigned.
10. Artwork initiated, box copy produced.
11. Package design/art approved, films made.
12. Box produced.

13. Software master created.

14. Verify software master. If no bugs, etc. release to production.

15. Tape, Disk, EPROM production.

16. Sample ROM production.

17. Masked ROM production.

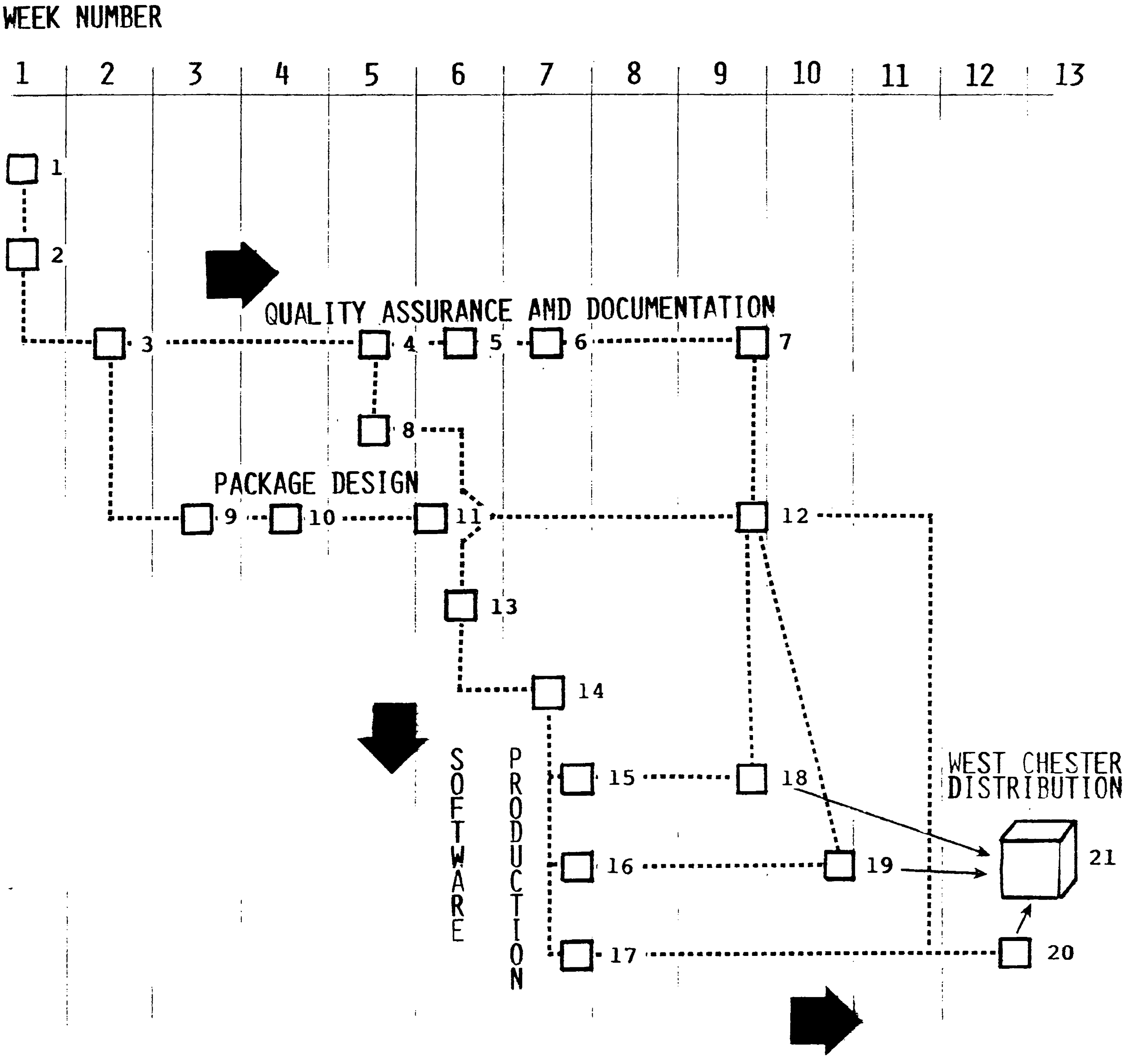
18, 19, 20. Package product and ship to West Chester Distribution Center.

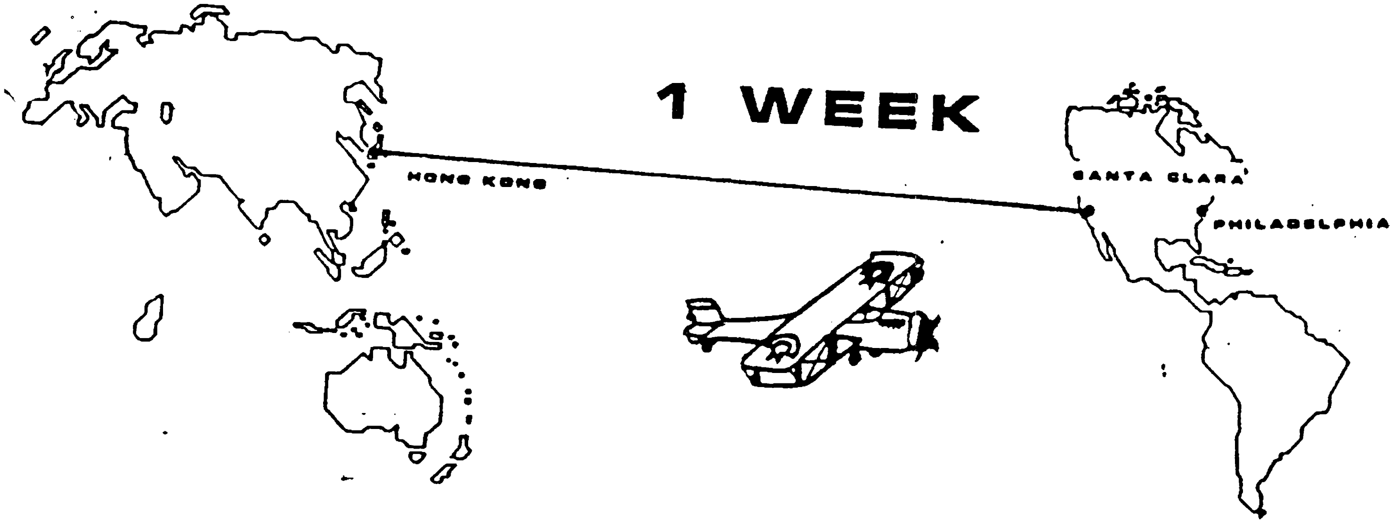
(Dependent upon where software is produced and packaged and how shipped, the product will reach distribution 1 day to 11 weeks after packaged.)

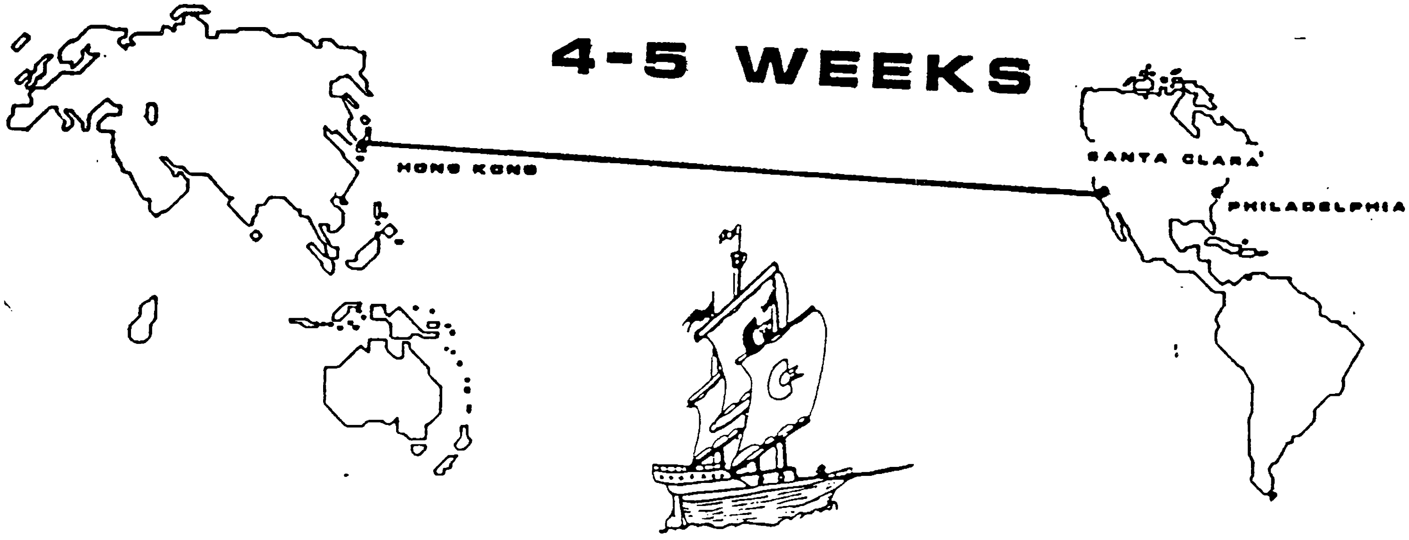
21. West Chester Distribution Center

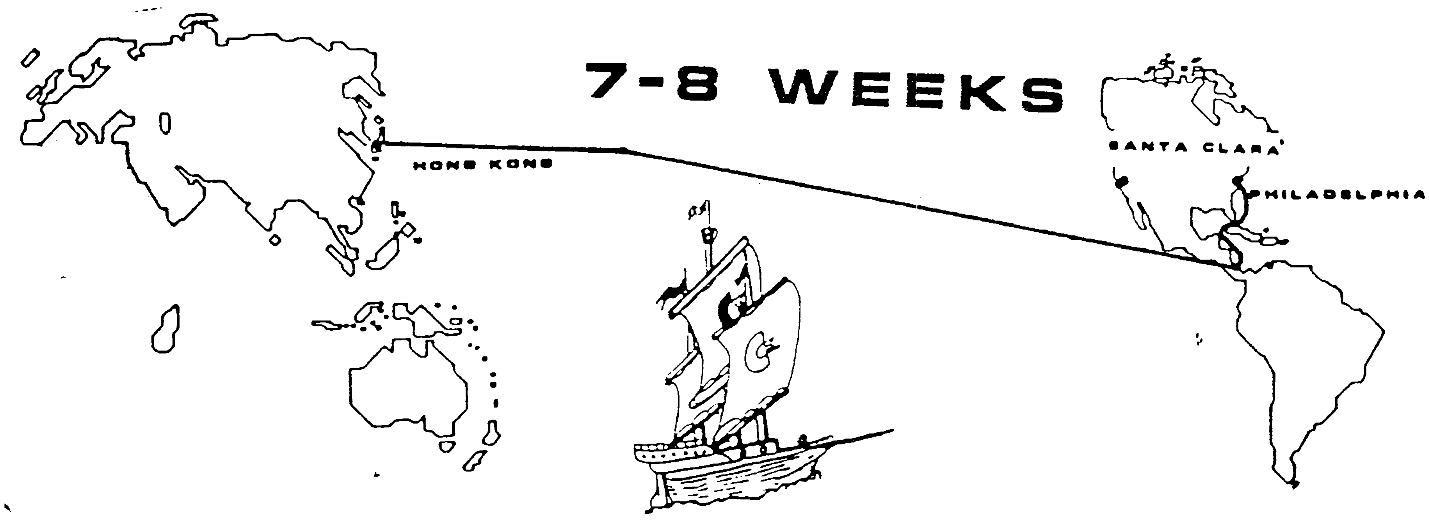
SOFTWARE PRODUCTION SETBACK CHART

(FASTEST TIMELINES)




1 WEEK
HONG KONG
SANTA CLARA
PHILADELPHIA


4-5 WEEKS
HONG KONG
SANTA CLARA
PHILADELPHIA


7-8 WEEKS
HONG KONG
SANTA CLARA
PHILADELPHIA

ROM PRODUCTION

ORDER WORK IN PROGRESS ASSEMBLY

MASKED ROM 5-7 WEEKS

HOT LOT 4 WEEKS

(10'000 UNIT
LOT PER WEEK)

SOFTWARE SELLS HARDWARE

COMMODORE SOFTWARE - GROSS SALES

	Month Sales (dollars)	FYTD (dollars)
October 1983	1,886,000	10,625,301
November 1983	3,049,395	13,674,695
December 1983	8,932,174	22,606,870
January 1984	1,882,444	24,492,020

* Above numbers include Trade sales for Publications, Educational, Productivity and Recreational Software.

* Total Accessory sales for same time period is: $14,241,197.

SOFTWARE SELLS HARDWARE

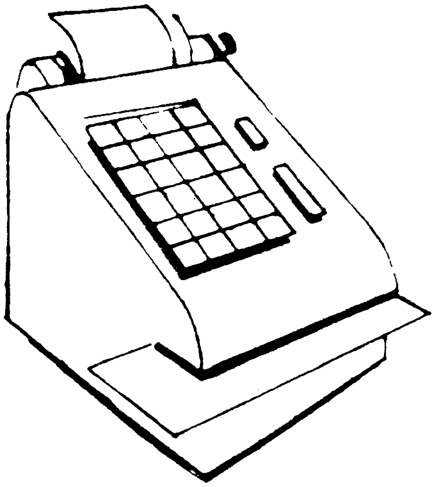
SUMMARY OF SHIPPABLE UNFILLED ORDERS.

	ShipPABLE ORDERS NOT FILLED (UNITS)
NOVEMBER 13, 1983	309,151
NOVEMBER 28, 1983	348,180
JANUARY 16, 1984	310,922
FEBRUARY 4, 1984	228,612

(NOTE: AT AVERAGE OF $10.00 PER UNIT, JANUARY ENDED WITH $2.5 MILLION DOLLARS UNFILLED ORDERS.)

CBM HARDWARE SALES (UNITS)
CUMMULATIVE THROUGH 1/31/84
COMSUMER PRODUCTS

	Installed Base	In-House Orders	Finished Goods + In-Transit
C64	1,251,000	101,000	13,700
SX64	3,700	11,000	8,400
VIC 20	1,117,000	4,000	58,500
TOTAL CPU:	2,371,700	116,000	80,600
1525	162,000	3,000	0
1526	8,100	8,900	126,000
MPS-801	66,700	14,300	41,700
TOTAL PRINTER:	237,800	23,200	167,700
1541 (Disk)	572,300	97,100	26,100

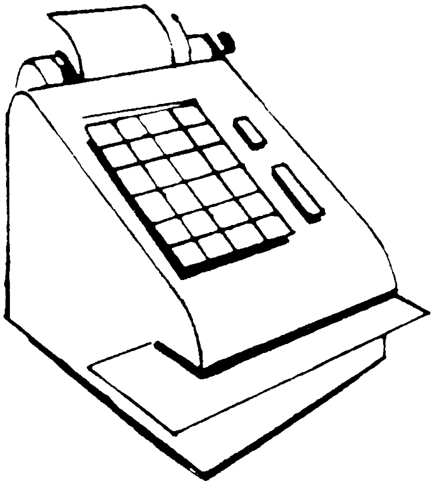


COMMODORE NET SALES
CUMMULATIVE THRU 12/31/83

COMSUMER COMPUTERS: 2,290,000 UNITS

CONSUMER SOFTWARE: 5,883,000 UNITS

SOFTWARE TO COMPUTER SALES RATIO: 2.5 TO 1



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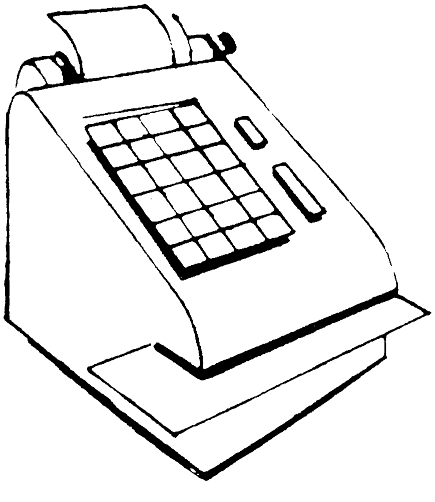
CBM HARDWARE SALES (UNITS)
CUMMULATIVE THROUGH 1/31/84
B-MACHINE, BUSINESS COMPUTER

	INSTALLED BASE	IN-HOUSE ORDERS	FINISHED GOODS + IN-TRANSIT
B128-LP	0	21	6323
8050	15,200	280	7,800
8250	1,000	10	3,200
TOTAL DISKS:	16,200	290	11,000



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